

REMARKS

Applicant respectfully requests reconsideration of the rejection in the office action mailed December 17, 2004. In regard to the priority statement to the parent application, applicant added that statement by a preliminary amendment when filing this divisional application October 16, 2003. Applicant respectfully traverses the rejection of the claims over the cited art and respectfully request reconsideration.

Patton discloses a well pump 27 for pumping drinking water. Pump 27 is driven by a motor 31 at the surface, which rotates a shaft 26 leading to pump 27. Lubricant from a container 50 flows down a tube 52 into a conduit 34 surrounding drive shaft 26. The lubricant contains a biocide. Referring to Figure 4, some of the lubricant, along with the biocide, leaks past seals 37 into contact with impeller 24, which pumps the fluid up annular passage 10 to the surface. Apparently it is common for about one quart of oil to be dispensed daily down conduit 34.

Applicant's independent claims, as amended, require incorporating a biocide into a coating, applying the biocide-incorporated coating onto one or more components of the pump, attaching an electrical motor to the pump, and lowering the pump and motor into the well. The examiner said it would have been well within the purview of one of ordinary skill in the art to fully lubricate and coat the pump prior to operation. Applicant respectfully disagrees.

Applicant submits that one viewing Patton would see no motivation to coat the stages of the pump because lubricant must be supplied via a tube anyway. Even if Patton coated the pump stages, the lubricant would still have to be dispensed. It appears far easier to deliver the biocide along with the lubricant via the conduit surrounding the shaft. One skilled in the art would not realize that a suitable biocide coating placed on the pump stages would last until the regular

maintenance time for pulling of the pump for repair or replacement. Electrical submersible pumps of the type herein often are not pulled for maintenance until 18 months or more of continuous use. Patton does not mention coatings, thus makes no suggestion that a biocide coating on the pump components would last that long.

Although in a well with a downhole electrical motor, as claimed, there would be no conduit surrounding a shaft for delivering lubricant, tubes for dispensing chemicals in a well have been employed in the past in connection with these types of pumps. Applicant submits because of the long duration that an electrical well pump must last before being pulled for maintenance, one skilled in the art of downhole electrical pumps would be led by Patton to dispense the biocide via a tube. There is no suggestion in Patton that the biocide could be incorporated into a suitable coating on the pump components.

McClaflin does not deal with a rotary pump, rather deals with a jet pump. McClaflin pointed out that jet pumps in the past had not been suitable for pumping heavy viscous crude oil because of cavitation. In McClaflin, power fluid is pumped down into annular space 10, where it flows inward into the jet pump as indicated by the arrows b. The fluid flows up a nozzle 34, causing a flow of well fluid as indicated by the arrow a. In order to pump the heavy viscous crude, a surfactant solution is introduced into the fluid flowing down annular space 10. A biocide is mixed with the surfactant.

Similar to Patton, whether or not a biocide is used, power fluid and surfactant must be pumped down annular space 10. It appears to be easier to add a biocide to the power fluid being pumped down than to coat the pump components. Applicant submits that it would not be obvious to one of average skill in the art to place the biocide coatings on the components of the

jet pumps 34 and 22. There is no motivation to do so because the power fluid has to be injected anyway. It would appear to be easier to simply mix in some biocide with the power fluid rather than coating the components and relying on the coating to last throughout the life of the jet pump.

Byassee deals with a household evaporator humidifier, which applicant submits is not analogous art to a well pump. In Byassee, as shown in Figure 4, the householder places water 50 in a container 30, possibly on a daily basis. Water 50 flows into the base platform 16 to a selected level. Motor 56 is located above the water and connected by a shaft 70 for rotating impeller 84 of pump 80. Pump 80 pumps the fluid up, as indicated by the arrows 104, to a chamber above an evaporator panel 128. The water flows downward into evaporator panel 128 through which air is drawn by fan 66. The air, moistened by water in evaporator panel 128, discharges into the room.

A number of the components in Byassee are made of molded plastic that contains a biocide or antimicrobial agent incorporated therein for resisting or retarding the growth of bacteria. As set forth at column 8, lines 20-27, these components include the following: the base platform 16; housing parts 78 and 80 of pump assembly 76; pump impeller 82; hollow column 72; outlet conduit 96; pipe 100; and frame 122. Applicant requires a biocide coating on the pump components, not a biocide incorporated into molded material such as polypropylene. The use of a coating allows applicant to use metal components, rather than molded plastic components.

Byassee also teaches that the evaporator panel has a fired clay-based covering or coating incorporated, the clay-based covering containing a biocide. The coating is hydrophilic to

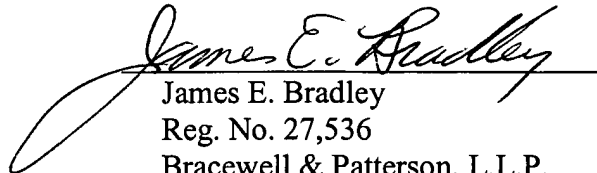
enhance the ability of the evaporator panel to retain water. Applicant submits that one would not wish to place such a clay-based coating on a pump component. Certainly Byassee does not suggest such a coating to be placed on any of the housing parts, pump parts or base platform, rather teaches to use a molded plastic having a biocide incorporated therein. Thus, applicant submits that one viewing either Patton or McClafin would not be led to utilize a coating on the pump stages because a ready supply of fluid would be delivered to the downhole pumps regardless whether or not the pump stages contained such a coating. As mentioned before, it appears far easier to simply include some biocide material into the lubricant or power fluid being delivered to the pump rather than to coat the pump stages.

Also, even if one did try to combine McClafin or Patton with Byassee, the combination would not meet the requirements of the claims. The combination would teach to make the pump components of molded plastic with a biocide incorporated in the material. The combination would not suggest coating the components of the pump with the biocide. The use of the clay-based coating on the evaporator would not be of any relevance to McClafin or Patton because neither uses evaporators downhole with its pump assemblies.

Applicant respectfully submits that the claims are now in condition for allowance and favorable action is respectfully requested.

Respectfully submitted,

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